J. M. WRIGHT.

AIR SHIP.

APPLICATION FILED JULY 14, 1908.

918,410. Patented Apr. 13, 1909.

2 SHEETS—SHEET 1.

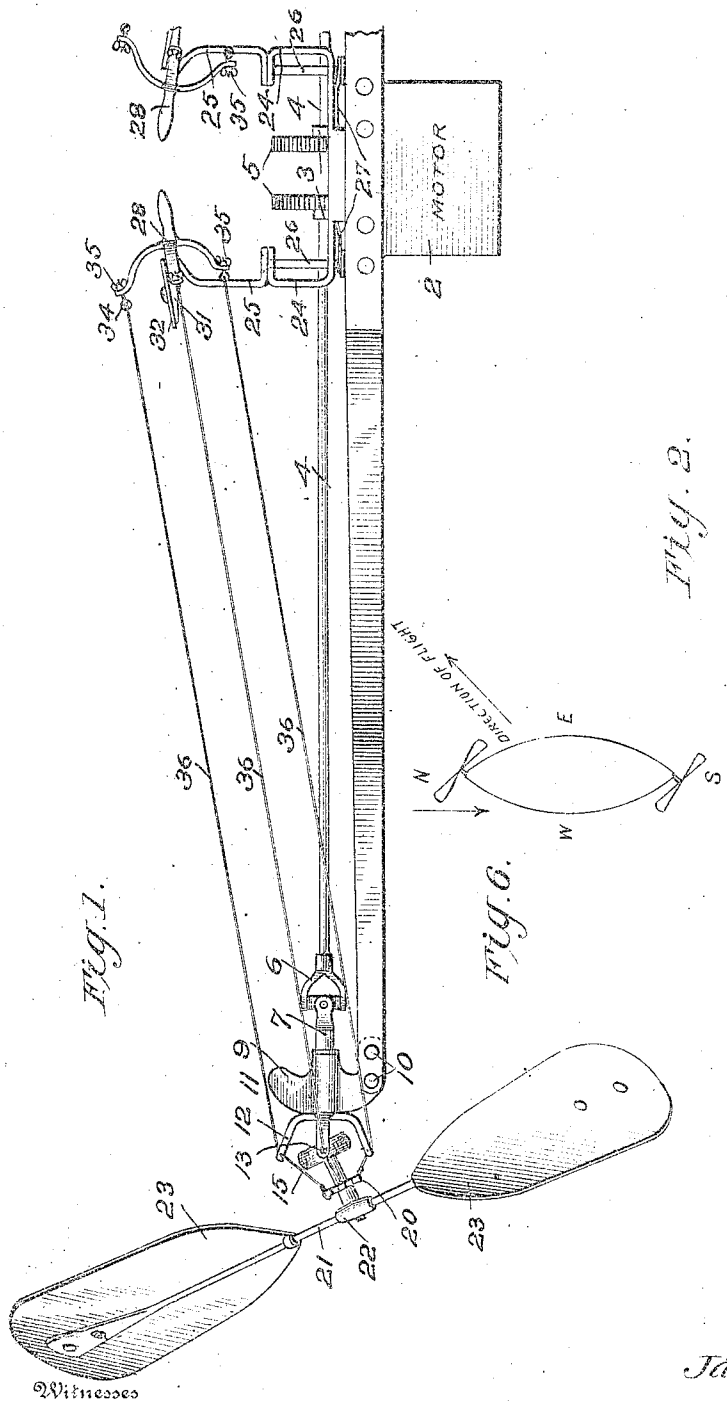


Fig. 1.

Fig. 6.

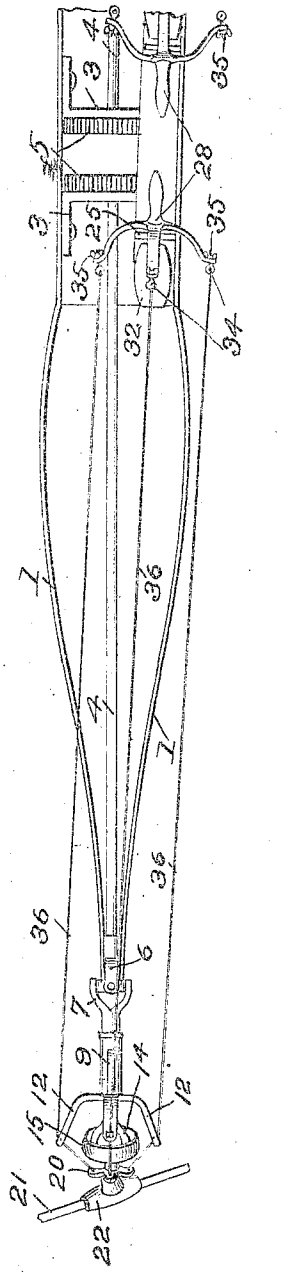


Fig. 2.

Witnesses

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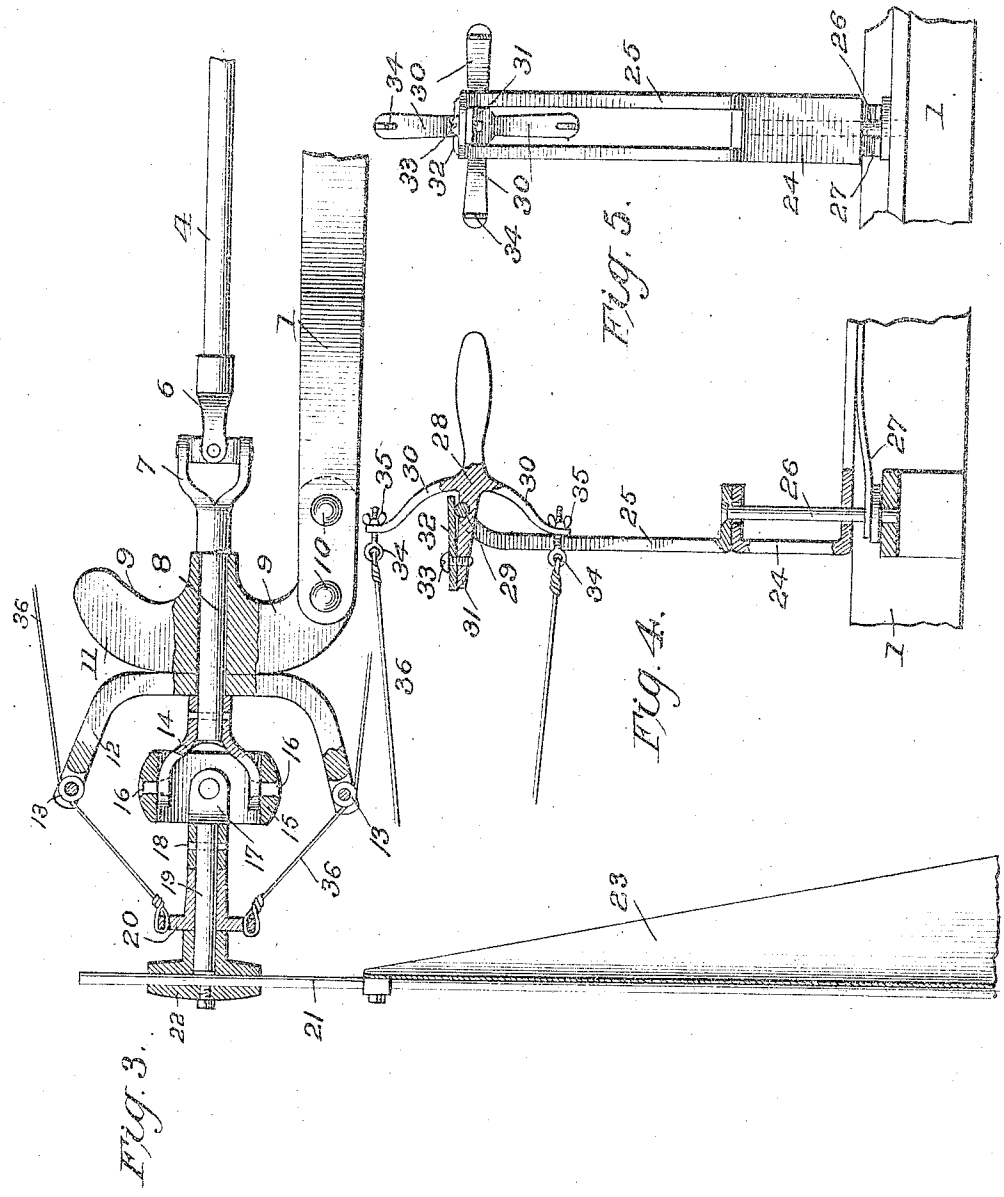


Fig. 3.

Fig. 5.

Fig. 4.

Witnesses

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UNITED STATES PATENT OFFICE.

JAMES M. WRIGHT, OF KEOKUK, IOWA.

AIR-SHIP.

No. 913,410. Specification of Letters Patent. Patented April 13, 1909.

Application filed July 14, 1908. Serial No. 443,448.

To all whom it may concern:

Be it known that I, JAMES M. WRIGHT, a citizen of the United States of America, residing at Keokuk, in the county of Lee and State of Iowa, have invented new and useful Improvements in Air-Ships, of which the following is a specification.

This invention relates to air ships, and more particularly to the mechanism for propelling and directing the ship, and one of the principal objects of the invention is to provide means of simple and light construction for adjusting the propeller wheels at various angles to give the required direction to the ship.

Another object of the invention is to provide propeller wheels mounted on a jointed shaft and connected up to a simple and efficient device for moving said jointed shaft to control the movements of the air-ship.

These and other objects may be attained by means of the construction illustrated in the accompanying drawings, in which,—

Figure 1 is a side elevation of one end of the controlling mechanism, the opposite end being of identical structure. Fig. 2 is a plan view of the same. Fig. 3 is an enlarged detail section of the outer end of the driving shaft and showing the manner of connecting the propeller wheels thereto. Fig. 4 is a detail partial section, showing the operating lever. Fig. 5 is an elevation of the same. Fig. 6 is a diagram illustrating the direction of flight of an air ship having the propeller wheels adjusted for such direction.

Referring to the drawing, the numeral 1 designates the framework for supporting the operative mechanism of an air ship, and secured centrally to said frame is a suitable motor 2 of any desired type. Suitably journaled in brackets 3 are the driving shafts 4, said shafts having each upon their inner ends a gear wheel 5 which meshes with a gear on the motor shaft.

Upon reference to Fig. 1 it will be seen that the mechanism represented upon one end of the shaft 4 is duplicated at the opposite end of the frame 1, and hence a description of one set of operating devices will serve for both. The shaft 4 at its outer end is provided with a yoke 6, said yoke being pivotally connected to a ring or jointed connection 7, said ring being formed on or connected to a short shaft 8 mounted in a bearing 9 connected to the frame 1 by bolts 10. The bearing 9 has a curved outer face 11. Mounted to turn easily upon the shaft 8 is a four-armed spider 12, said spider having journaled in the outer ends of its arms rollers 13 for a purpose which will presently appear. Connected to the outer end of the short shaft 8 is a yoke 14 to which a ring 15 is pivoted at 16, and pivotally connected to the ring 16 is a yoke 17 connected by a pin 18 to a jointed shaft 19. Mounted on the shaft 19 is a collar 20, and connected to the outer end of said shaft are the propellers, each comprising a shaft 21 extended through a keeper 22 secured upon the end of the shaft 19. As shown, the propeller wheels each comprises a vane or paddle 23 secured at the opposite ends of the shaft 21 and set at an angle thereto relatively.

The mechanism for adjusting the angle of the propeller wheels comprises a frame 24 upon which is supported the lever frame 25, said frames being connected by a frictional pin 26 which permits the movement of the frame 25 relatively to the frame 24 when the tension of the spring 27 is overcome. Mounted upon the upper end of the frame 25 is an operating lever 28, said operating lever being mounted upon a cross bar 29 of the frame 25, said lever having four radial arms 30 and a central projecting finger 31. A spring plate 32 connected to the finger 31 by a screw 33 bears upon the cross bar 29 to create sufficient friction to hold the lever in its adjusted positions. Screw eyes 34 have their threaded shanks passed through openings in the outer ends of the arms 30, said shank being fitted with winged nuts 35. Connected to the eyes 34 are the operating cords 36, said cords extending outwardly, passing over the pulleys 13 on the arms 12, and the outer ends of said cords being connected to the collar 20 at four diametrical points.

The operation of my invention may be briefly described as follows: Whenever it is required to change the angle of the blades 23 the levers 28 are adjusted either vertically or horizontally to set the angle of the blades 23 to either ascend, propel, direct or descend. The movements of the levers 28 are instantly communicated through the cords 36 to the jointed ends of the shafts 4 and to the propeller wheels.

Upon reference to Fig. 6 it will be seen that the propeller wheels when set in parallel relation will direct the ship as indicated by the arrow in said figure.

From the foregoing it will be obvious that mechanism constructed and arranged in ac-

cordance with my invention is light, durable and efficient, is instantly responsive to the movements of the levers and can be operated to propel and direct an air ship for ascension, direction, propulsion and descent.

I claim:—

1. Operative mechanism for air ships comprising drive shafts provided with jointed members at their outer ends, propeller wheels connected to said jointed members, a collar on each of said jointed members, a spider provided with arms carrying pulleys, cords connected to said collar and passed over said pulleys, operating levers to which said cords are connected, and pivotal frames to which said levers are connected.

2. In an operative mechanism for air ships, drive shafts, jointed members at the outer ends of said shafts, propeller wheels carried by said jointed members, cords connected to said jointed members, a spider comprising a hub and radial arms, pulleys journaled in said arms over which said cords pass, operating levers each provided with radial arms to which said cords are connected, frames upon which said levers are pivotally mounted, handles on said levers and friction plates bearing upon the pivotal points of said levers to hold the same in adjusted positions.

3. In mechanism for operating air ships, the combination of two jointed shafts mounted in alinement upon a frame, jointed members at the outer ends of said shafts, propellers mounted on said jointed members, collars connected to said jointed members, spiders connected to said shafts, and each provided with curved radial arms, cords connected to said collars and extending over pulleys on said arms, operating levers pivotally mounted upon frames at the ends of said shafts, said levers having radial arms to which said cords are attached, handles for operating said levers, and adjustable friction plates bearing upon the pivotal points of said operating levers for holding the same in adjusted positions.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES M. WRIGHT.

Witnesses:
W. D. PATTERSON,
G. R. PARSONS.